

A NEW SPECIES OF *PERIONYX* PERRIER (MEGASCOLECIDAE,
OLIGOCHAETA) FROM NORTHWEST HIMALAYA, INDIA¹

J.M.JULKA AND R.PALIWAL²

(With a text-figure).

The genus *Perionyx* is endemic to the Indian subcontinent. It comprises 53 species including the common Indian compost worm *Perionyx excavatus* Perrier which is recommended for vermiculture because of its efficacy in degrading various organic waste materials like cow dung, sewage sludge, crop straw, etc. Most of the species are confined to sites with high organic matter and moisture. *Perionyx* is believed to have evolved so long ago in the Indian Peninsula that time was available for its migration to Sri Lanka before the latter was separated, and for its penetration into the eastern Himalaya and Burma across the Rajmahal-Garo Gap (Gates 1972). Species explosion occurred in the eastern Himalaya, a region with considerable and regular rainfall and high organic matter in the soil. The genus is poorly represented in the northwest Himalaya. Only two endemic species, *P. bainii* Stephenson and *P. simlaensis* (Michaelsen), both from Himachal Pradesh occur in the northwest Himalaya (Stephenson 1923). The present paper describes one more new species, *Perionyx barotensis*, from this region.

***Perionyx barotensis* sp.nov.**

Description: Length 71-95 mm, diameter 2.5-3 mm, 105-130 segments. Prostomium epilobic, tongue open. First dorsal pore at 4/5, 5/6. Clitellum annular, xiii-xvii, xviii. Setae perichaetine; $aa=1.2-1.8$ $ab=1.2-1.8$ $bc=0.7-1.5$ $yz=0.5-1.1$ zz on xii, $aa=1.1-1.8$ $ab=1.3-1.8$ $bc=0.5-1.0$ $yz=0.4-0.7$ zz on xxiv; 39-51 on ii, 48-57 on vii, 53-59 on xii, 42-62 on xx, 5-6 between spermathecal pore lines on vii, 6-8 between male pore lines on xvii. Male genital area

on xviii, transversely elliptical, extending laterally to setae *gh*; combined male and prostatic pores minute, at centres of paired concave furrows, in line with *cd*, 0.06-0.08 body circumference apart. Female pore minute, single and median on xiv. Spermathecal pores paired, minute in 7/8/9 at *c* lines, 0.06-0.07 body circumference apart. Nephridiopores inconspicuous, irregularly alternating between mid-dorsal and mid-lateral lines (as determined internally).

Pigmentation red. Septa 4/5-6/7 delicate, 7/8-12/13 slightly muscular. Oesophagus with a small and slightly muscular gizzard in v, enlarged and moniliform in xi-xiii internally with uninterrupted longitudinal whitish (calciferous) ridges; intestine begins in xvii; typhlosole absent. Dorsal blood vessel single and complete; supra-oesophageal vessel single in x-xiii; extra-oesophageal vessels paired, v-xiii, one vessel joins subneural trunk and the other passes to parietes; subneural bends laterally in xiii and turns up along anterior face of septum 13/14 to join an extra-oesophageal, a thin vessel from subneural extends anteriorly over a few segments beneath the nerve cord; lateral hearts originating from supra-oesophageal vessel with delicate connectives to dorsal vessel in x-xiii, last pair of hearts in xiii. Holandric; testes and male funnels free, in x and xi; seminal vesicles paired, in xi and xii. Penial setae median to openings of prostatic ducts, each ornamented with indistinct broken ridges ectally, 0.29-0.35 mm long, 12-14 μ diameter. Spermathecae paired, in viii and ix, each with a sessile diverticulum at ental end of duct; ampulla irregular in shape; duct shorter than ampulla. Nephridia avesculate.

Material examined: Holotype: clitellate, Barot, alt. 1835 m, 25 July 1992, R.Paliwal; paratypes: 1 juvenile, 2 acitellates and 3 clitellates with same

¹Accepted April 1993.

²High Altitude Zoology Field Station, Zoological Survey of India, Solan - 173 212 (H.P).

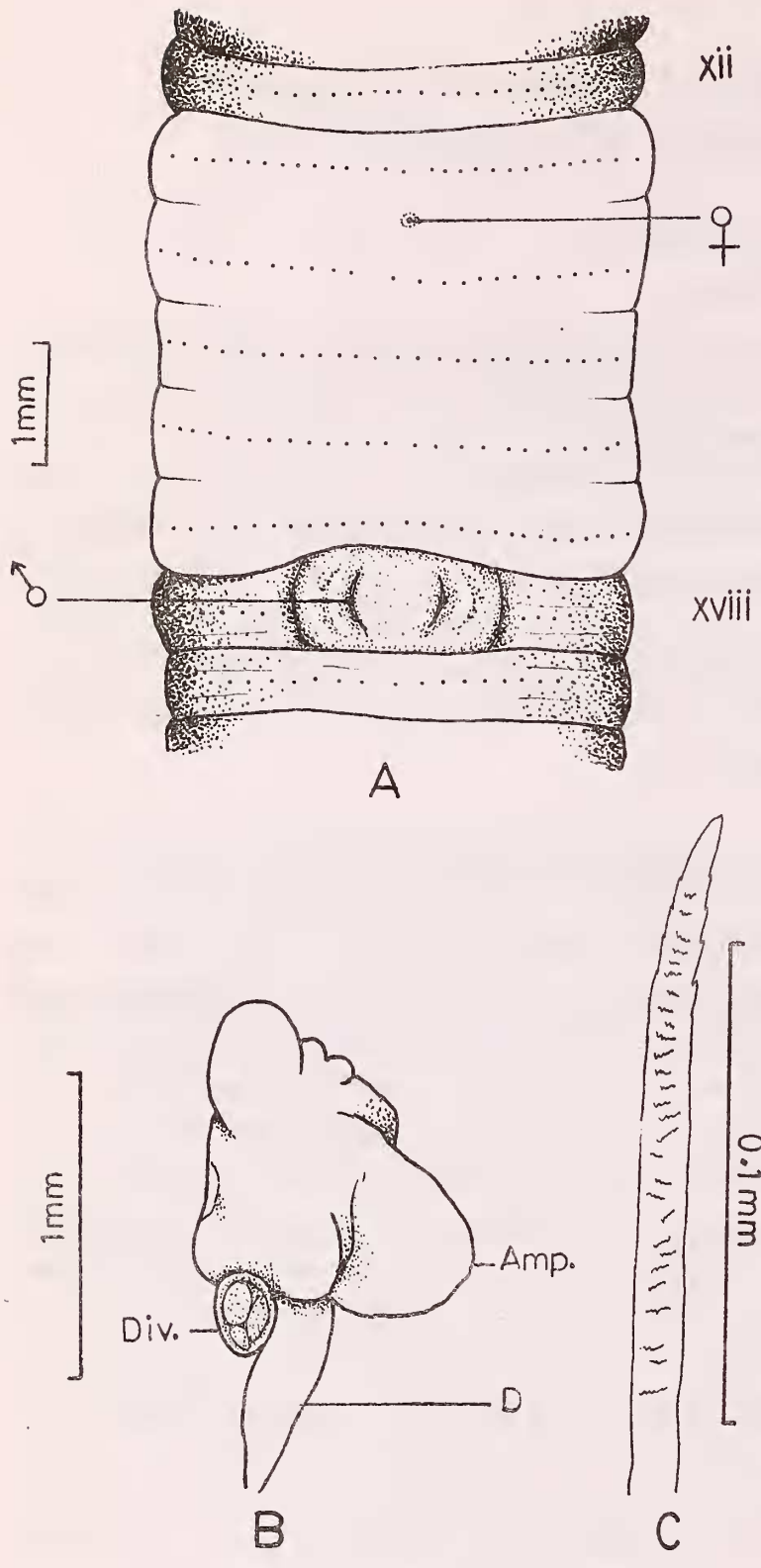


Fig.1. *Perionyx barotensis* sp. nov.
 A. Clitellum and male genital area ; B. spermatheca;
 C. penial seta.

data as for holotype; 1 juvenile and 2 clitellates, Barot, 26 July 1986, J.M.Julka and A.Simonetta. All specimens are in the Zoological Survey of India, Solan (H.P.).

Perionyx barotensis sp. nov. belongs to a group of species with spermathecal pores in intersegmental furrows 7/8 and 8/9. Within this group, it shows closer affinities with a northeast Indian species, *Perionyx fossus* Stephenson, in having little modified penial setae and last pair of hearts in xiii. But it differs by the location of male pores in paired concave furrows, spermathecal pores close to mid-ventral line (0.06-0.07 body circumference apart) and unidiverticulate spermathecae, whereas in *fossus*, male pores are in a single transvers groove, spermathecal pores wider (0.75 body circumference apart) and spermathecae being bidiverticulate. Differences from two northwest Himalayan endemic species under this group are: location of last pair of hearts in xiii as compared to xii in *bainii* and absence of penes which are well developed in *simlaensis*.

The species has been named after the collection locality, Barot.

ACKNOWLEDGEMENTS

We are grateful to the Director, Zoological Survey of India, Calcutta and Officer-in-Charge, High Altitude Zoology Field Station, Z.S.I., Solan for providing necessary facilities. Thanks are also due to Mr. Anil Gupta, Artist, HAZFS, ZSI, Solan for the help in preparing the illustrations.

REFERENCES

GATES, G.E.(1972); Burmese earthworms. An introduction to the systematics and biology of megadrile oligochaetes with special reference to southeast Asia. *Trans. Am. phil. Soc.* 62 (7):1-326.

STEPHENSON, J. (1923): Fauna of British India including Ceylon and Burma, Oligochaeta. Taylor and Francis, London, 518 pp.